



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/644,951

08/21/2003

Kinichi Higure

500.43030X00

6801

24956

7590

05/14/2007

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.  
1800 DIAGONAL ROAD  
SUITE 370  
ALEXANDRIA, VA 22314

EXAMINER

CORRIELUS, JEAN B

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

05/14/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/644,951	<b>Applicant(s)</b> HIGURE, KINICHI	
	<b>Examiner</b> Jean B. Corrielus	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 1-22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/12/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. Applicant's response has overcome the drawing objection.

### ***Information Disclosure Statement***

2. The information disclosure statement filed 3/12/07 has been considered in part. Two references in the IDS have not been considered because applicant did not provide reference number for each of such references.

### ***Claim Objections***

3. Applicant's response has overcome the claim objection. However, after further consideration, claims 1-22 are objected as follow:

Claim 1, line 5, before "frequency", "first" should be inserted; the same comment applies to line 6; line 9, before "frequency", "second" should be inserted; the same comment applies to line 11; line 12, "outputs" should be replaced by "the first and second frequency errors" so as to be consistent with limitation in lines 6 and 11; line 15, "an output of one" should be replaced by "said one of the first and second frequency errors"; line 16, "or" should be replaced by "and".

Claim 2, line 4, "output" should be replaced by "the first or second frequency errors"; line 5, "one of said first and" should be replaced by "said first or"; line 8, "a value" should be replaced by "the result" so as to be consistent with antecedent in line 6.

Claim 3, line 4, "output" should be replaced by "first frequency error"; line 5, "an output of one" should be replaced by " the first or the second frequency errors"; line 5,

Art Unit: 2611

after "first", "and" should be replaced by "or"; line 5, "detection" should be replaced by "selection".

Claim 5, line 6, "inverting and conducting a complex conjugate of said symbol and delivering" should be replaced by "generating and outputting" so as to be consistent with the specification page 11, lines 7-14; line 8, "out of" should be replaced by "by"; line 10, "another" should be inserted after "conjugate of said"; line 12, "phase inverter" should be replaced by "first complex conjugate circuit" so as to be consistent with antecedent; line 12, "out of" should be replaced by "by"; line 13, "first" should be inserted before "complex"; line 19, "of the second symbol set" should be inserted after "of said symbol"; lines 20-21 "inverting and conducting a complex conjugate of said symbol and delivering" should be replaced by "generating and outputting" so as to be consistent with the specification page 11, lines 7-14; line 22, "out of" should be replaced by "by"; line 22, "another" should be inserted after "conjugate of said"; line 24, "of said second symbol set" should be inserted after "symbol"; line 27, "phase inverter" should be replaced by "second complex conjugate"; line 27, "out of" should be replaced by "by"; line 28, "second" should be inserted before "complex".

Claim 14, step c) should be replaced by "c) generating and delivering a phase of the product calculated in said step b)"; step d), before "product", "second" should be inserted; and "said symbol" should be replaced by "said another symbol of said first symbol set"; step e) "outputs in said steps c) and d)" should be replaced by "phase of the product calculated in step c) and the second product calculated in step d)"; "third"

should be inserted before "product"; step f), "output" should be replaced by "third product calculated in step e)".

Claim 16, line 5, "a" should be replaced by "an".

Claim 17, step h) before product, "fourth" should be inserted; after "said symbol", "of said second symbol set" should be inserted; step I), "inverting" should be replaced by "generating" and "the phase of the value" should be replaced by "a phase of the fourth product"; step J) "fifth" should be inserted before "product"; and after "said symbol", "of said second symbol set" should be inserted; step k), "the outputs in said steps I) and J)" should be replaced by "the phase of the fourth product and the fifth product and before "product", "sixth" should be inserted; step l), "the phase" should be replaced by "a phase", "the output" should be replaced by "sixth product calculated".

Claim 19, "quadrature" is mistyped as "quadrature" in addition, what does it mean by "cause it to be applied with quadrature detection"?

Claim 21, line 9, what kind of values does the claim limitation "in accordance with values" refer to?

Claim 22, line 13, "first" should be inserted before "product"; line 14, "out by" should be replaced by "by"; line 15, "phase inversion" should be replaced by "complex conjugate" and "inverting" should be replaced by "generating"; same line, "the phase" should be replaced by "a phase"; line 16, "value" should be replaced by "first product" and "first" should be inserted before "multiplier"; line 17, "a second product of" should be inserted before "another"; line 19, "symbol" should be replaced by "another synchronous word symbol of said synchronous of said synchronous word symbol area"; lines 20-21,

Art Unit: 2611

"output of said phase inversion" should be replaced by "the phase generated by said complex conjugate"; line 21 "output of" should be replaced by "second product calculated by"; line 23, "complex" should be replaced by "third"; line 23, " the phase" should be replaced by "a phase"; line 23, "output of" should be replaced by "third product calculated by".

Note that any claim whose base claim is objected is likewise objected. In addition, note the above amendment is necessary in order to correct for the plurality of informalities noted in the claims so as to improve the claim language.

Appropriate correction is required.

***Allowable Subject Matter***

7. Claims 1-22 would be allowable if amended to overcome the objection sets forth above.


9. The following is a statement of reasons for the indication of allowable subject matter: a method and apparatus for generating an AFC signal are disclosed. The closest prior art Asahara et al US Patent No. 6,631,174, discloses similar method and apparatus. However, Asahara et al does not teach or fairly suggest the limitations of recited in claim 1; lines 3-22, claim 14 step a-f and claim 21, lines 3-18.

Art Unit: 2611

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on M-TH 10:00 AM until 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Jean B Corrielus  
Primary Examiner  
Art Unit 2611

5-10-07